

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

VOLTERRA SEMICONDUCTOR,)
LLC.,)
)
Plaintiffs,)
)
v.) C.A. No. 19-2240-CFC
)
MONOLITHIC POWER SYSTEMS,)
INC.,)
)
Defendant.

AMENDED JOINT CLAIM CONSTRUCTION CHART

Pursuant to Paragraph 17 of the Scheduling Order (D.I. 69), Plaintiff Volterra Semiconductor, LLC (“Volterra”) and Defendant Monolithic Power Systems, Inc. (“Monolithic”) hereby submit this Amended Joint Claim Construction Chart.

/s/ Robert M. Oakes
Robert M. Oakes (No. 5217)
FISH & RICHARDSON P.C.
222 Delaware Avenue, 17th Floor
P.O. Box 1114
Wilmington, DE 19899
(302) 652-5070
oakes@fr.com
Attorneys for Plaintiff

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/s/ Nathan R. Hoeschen
Karen E. Keller (No. 4489)
Andrew E. Russell (No. 5382)
Nathan R. Hoeschen (No. 6232)
SHAW KELLER LLP
I.M. Pei Building
1105 North Market Street, 12th Floor
Wilmington, DE 19801
(302) 298-0700
kkeller@shawkeller.com
arussell@shawkeller.com
nhoeschen@shawkeller.com
Attorneys for Defendant

AGREED CONSTRUCTIONS

Claim Term	Claim(s)	Agreed Construction
“A method for reducing ripple in a DC-to-DC converter of the type producing an output voltage from an input voltage, comprising the steps of:”	’986 Patent, Claim 17	The preamble is limiting.
“An N-phase coupled inductor for magnetically coupling N phases of a power converter”	’408 Patent, Claim 14	The preamble is limiting.
“A two phase coupled inductor for magnetically coupling first and second phases of a power converter	’955 Patent, Claims 1, 23	The preamble is limiting.
“A coupled inductor”	’955 Patent, Claim 12	The preamble is limiting.

Claim Term	Claim(s)	Agreed Construction
“A two phase DC-to-DC converter”	’955 Patent, Claim 16	The preamble is limiting.
“coupled inductor”	’408 patent, claim 14 ’955 patent, claims 1–3, 5, 10, 12–16, 23–28	“an inductor with two or more windings arranged such that the magnetic fields produced by the windings interact with one another”

CONTESTED CONSTRUCTIONS¹**U.S. Patent Nos. 6,362,986 (17, 18, 20, 21, 23)**

Claim Term	Claim(s)	Plaintiffs' Proposed Construction, Intrinsic Evidence	Defendant's Proposed Construction, Intrinsic Evidence
"orienting, in like direction"	'986 Patent, Claim 17	<p>Plain and ordinary meaning.</p> <p>'986 Patent: col. 2, lines 19-33; col. 4, line 66-col. 5, line 26; col. 6 line 3-col. 8, line 35; col. 7, lines 15-23; col. 10, lines 8-34; FIG. 1; FIG. 2; FIG. 3A; FIG. 3B; FIG. 10.</p> <p>IPR2020-1368, Paper 19, Decision Denying Institution of Inter Partes Review at 10</p> <p>IPR2020-1370, Paper 18, Decision Denying Institution of Inter Partes Review at 10.</p>	<p>"windings are wound in such a way so that flux between the windings flows in opposite directions ['about the common core']"</p> <p>'986 Patent at claim 17, 2:19-33, 4:28-29, 4:66-5:26, 6:7-10, 7:10-32, Figs. 1, 3A, 3B.</p> <p>IPR2020-1368, Paper 9, Patent Owner's Preliminary Response at 14-16.</p>

¹ Volterra believes that the terms "a [first/second] number of turns", "windings", and "planar surface" should be included in the Amended Joint Claim Construction Chart because although MPS did not brief these terms, MPS has taken its previously proposed claim constructions from the Joint Claim Construction Chart and asked the Court to adopt these constructions as the ordinary meaning of the three terms. (*See* D.I. 134 at 9, 16.) Volterra disputes that MPS's proposed constructions are the ordinary meaning. (*See* D.I. 168 at 3-4.)

MPS believes the terms should not be included in the joint chart, as MPS withdrew these terms from consideration in light of the Court's guidance to limit the number of terms in dispute to the most important.

Claim Term	Claim(s)	Plaintiffs' Proposed Construction, Intrinsic Evidence	Defendant's Proposed Construction, Intrinsic Evidence
		Plaintiff reserves the right to rely on any evidence cited or relied on by Defendant, as well as any evidence cited in the parties' claim construction briefs.	IPR2020-1370, Paper 9, Patent Owner's Preliminary Response at 14–16.
“common core”	’986 Patent, Claim 17	<p>Plain and ordinary meaning.</p> <p>’986 Patent: col. 1, lines 60-67; col. 2, lines 2-63; col. 3, line 48-col. 4, line 6; col. 6, lines 3-18; col. 7, lines 15-25; col. 9, lines 20-39; col. 10, lines 8-14; col. 10, lines 35-51; col. 11, lines 2-10; col 12, lines 17-45; FIG. 1; FIG. 2; FIG. 3B; FIG. 3A; FIG. 8; FIG. 10; FIG. 13; FIG. 14.</p> <p>Plaintiff reserves the right to rely on any evidence cited or relied on by Defendant, as well as any evidence cited in the parties' claim construction briefs.</p>	<p>“continuous magnetic core”</p> <p>’986 Patent at Claim 17, Abstract, 1:48–67, 2:3–12, 2:38–63, 3:55-4:8, 4:33–36, 4:44-46, 6:5–10, 6:38-40, 7:15–25, 10:9–12, 10:35–51, 11:1–31, 12:5–9, 12:29-31, 12:36-38, Figs. 1, 3A, 3B, 8, 9, 10, 12–14.</p> <p>IPR2020-1368, Paper 9, Patent Owner's Preliminary Response at 14–16.</p> <p>IPR2020-1370, Paper 9, Patent Owner's Preliminary Response at 14–16.</p>

Claim Term	Claim(s)	Plaintiffs' Proposed Construction, Intrinsic Evidence	Defendant's Proposed Construction, Intrinsic Evidence
			<p>7,352,269 Patent Prosecution History, Response to Office Action (September 14, 2005) at 21–22.</p> <p><i>Investigating Coupling Inductors in the Interleaving QSW VRM</i> by P. Wong, Q. Wu, P. Xu, B. Yang, and F.C. Lee (February 2000)</p>
“a [first/second] number of turns”	’986 Patent, Claim 23	<p>Plain and ordinary meaning.</p> <p>’986 Patent: col. 12, lines 55-62; FIG. 1; FIG. 3A; FIG. 3B; FIG. 8; FIG. 10; FIG. 13; FIG. 14; claim 15; claim 16; claim 23.</p> <p>Plaintiff reserves the right to rely on any evidence cited or relied on by Defendant, as well as any evidence cited in the parties’ claim construction briefs.</p>	<p>“two or more turns”</p> <p>’986 Patent at 3:14-16, 12:55-62.</p>
“windings”/“winding”	’986 Patent, Claims 17, 18, 20, 21, 23	<p>Plain and ordinary meaning.</p> <p>’986 Patent: Abstract; col. 1, lines 47-67; col. 2, line 2-col. 3, line 8;</p>	<p>“a conductor completing at least one full turn around a magnetic core”</p>

Claim Term	Claim(s)	Plaintiffs' Proposed Construction, Intrinsic Evidence	Defendant's Proposed Construction, Intrinsic Evidence
		<p>col. 3, line 39-col. 4, line 48; col. 5, lines 2-45; col. 9, lines 20-39; col. 10, lines 8-13; col. 11, line 33-col. 12, line 27; FIG. 2; FIG. 3A; FIG. 3B; FIG. 4; FIG. 5; FIG. 6; FIG. 7; FIG. 9; FIG. 10.</p> <p>Plaintiff reserves the right to rely on any evidence cited or relied on by Defendant, as well as any evidence cited in the parties' claim construction briefs.</p>	<p>'986 Patent at 2:3–33, 10:9–12, 10:43–47, 11:15–17, 12:55-62, 12:17–45, Figs. 1, 3A, 3B, 8, 9, 10, 12–14.</p>

U.S. Patent Nos. 7,525,408 (14)

Claim Term	Claim(s)	Plaintiffs' Proposed Construction, Intrinsic Evidence	Defendant's Proposed Construction, Intrinsic Evidence
"wound about"	'408 patent, Claim 14	<p>Plain and ordinary meaning.</p> <p>'408 Patent: col. 2, line 65-col. 3, line 2; col. 4, lines 15-48; col. 5, line 20-col. 6, line 26; col. 7, lines 4-29; col. 7, lines 44-56; col. 8, lines 43-54; col. 9, lines 13-28; col. 11, lines 9-12; col. 11, lines 41-63; col. 12, lines 7-12; FIG. 2; FIG. 6; FIG. 7; FIG. 8; FIG. 9; FIG. 10; FIG. 16; FIG. 17</p> <p>IPR2020-1348, Paper 1, Petition for Inter Partes Review at 10, 11, 23, 25, 33, 38, 39, 73, 74, 82-83, 96-100.</p> <p>IPR2020-1348, Paper 8, Patent Owner's Preliminary Response at 23, 25-29.</p> <p>Plaintiff reserves the right to rely on any evidence cited or relied on by Defendant, as well as any evidence</p>	<p>"wrapped around"</p> <p>'408 Patent at 5:24-26, 5:56-58, 7:4-13, 7:27-29, 7:53-56, 9:24-28, 11:41-12:12, 13:21, 13:24, Figs. 2, 3, 4, 6-13, 17.</p> <p>IPR2020-1348, Paper 8, Patent Owner's Preliminary Response at 31-33, 37-38, 49-51, 57, 63-65.</p>

Claim Term	Claim(s)	Plaintiffs' Proposed Construction, Intrinsic Evidence	Defendant's Proposed Construction, Intrinsic Evidence
		cited in the parties' claim construction briefs.	
"a magnetic core including ... N-1 passageways"	'408 patent, Claim 14	<p>Plain and ordinary meaning.</p> <p>'408 Patent: col. 2, line 58-col. 3, line 2; col. 4 lines 26-48; col. 4, line 58-col. 5, line 10; col. 5, line 20-col. 6, line 13; col. 6, line 57-col. 9, line 47; col. 10, line 21-col. 12, line 12, FIG. 1; FIG. 3; FIG. 4; FIG. 5; FIG. 6; FIG. 7; FIG. 8; FIG. 9; FIG. 10; FIG. 14; FIG. 15; FIG. 16; FIG. 17.</p> <p>IPR2020-1348, Paper 1, Petition for Inter Partes Review at 35, 36, 38-41, 45, 46, 79.</p> <p>7,352,269 Patent Prosecution History, Response to Office Action (September 14, 2005) at 6 (cl. 36, 39).</p> <p>IPR2020-1348, Paper 8, Patent Owner's Preliminary Response at 65-66.</p>	<p>"N-1 passageways within a single magnetic core, rather than two magnetic core elements separated by a gap"</p> <p>'408 Patent at 4:15–54, 4:65–67, 6:20–7:3, 9:48–10:50, Fig. 2, Fig. 5, Figs. 11–14.</p> <p>7,352,269 Patent Prosecution History, Response to Office Action (September 14, 2005) at 21–22.</p> <p>7,525,408 Patent Prosecution History, Response to Restriction Requirement (March 26, 2008) at 6-7.</p> <p>IPR2020-1348, Paper 8, Patent Owner's Preliminary Response at 67.</p>

Claim Term	Claim(s)	Plaintiffs' Proposed Construction, Intrinsic Evidence	Defendant's Proposed Construction, Intrinsic Evidence
		<p>Plaintiff reserves the right to rely on any evidence cited or relied on by Defendant, as well as any evidence cited in the parties' claim construction briefs.</p>	
<p>"N connecting magnetic elements" / "each connecting magnetic element being coupled to the first and second magnetic elements"</p>	<p>'408 patent, Claim 14</p>	<p>Plain and ordinary meaning.</p> <p>'408 Patent: col. 2, line 58-col. 3, line 2; col. 4, lines 26-48; col. 4, line 58-col. 5, line 10; col. 5, line 20-col. 6, line 13; col. 6, line 57-col. 9, line 47; col. 10, line 21-col. 12, line 12, FIG. 1; FIG. 3; FIG. 4; FIG. 5; FIG. 6; FIG. 7; FIG. 8; FIG. 9; FIG. 10; FIG. 14; FIG. 15; FIG. 16; FIG. 17.</p> <p>IPR2020-1348, Paper 1, Petition for Inter Partes Review at 17, 18, 26-33, 60, 61, 89, 92, 99-102, 107-108.</p> <p>IPR2020-1348, Paper 19, Decision Denying Institution of Inter Partes Review at 3-6.</p>	<p>"N magnetic elements for physical connection" / "Each connecting magnetic element physically connected to the first and second magnetic elements"</p> <p>'408 Patent at 9:48–10:50, Figs. 11–14.</p> <p>7,525,408 Patent Prosecution History, Response to Restriction Requirement (March 26, 2008) at 6-7.</p> <p>IPR2020-1348, Paper 8, Patent Owner's Preliminary Response at 65-67.</p>

Claim Term	Claim(s)	Plaintiffs' Proposed Construction, Intrinsic Evidence	Defendant's Proposed Construction, Intrinsic Evidence
		Plaintiff reserves the right to rely on any evidence cited or relied on by Defendant, as well as any evidence cited in the parties' claim construction briefs.	IPR2020-1348, Paper 19, Decision Denying Institution of Inter partes Review at 5.

U.S. Patent Nos. 7,772,955 (1–3, 5, 10, 12-21, 23–28)

Claim Term	Claim(s)	Plaintiffs’ Proposed Construction, Intrinsic Evidence	Defendant’s Proposed Construction, Intrinsic Evidence
“[a/the] magnetic core forming a passageway”	’955 patent, Claims 1, 12, 16, and 23	<p>Plain and ordinary meaning.</p> <p>’955 Patent: col. 2, line 58-col. 3, line 2; col. 4 lines 26-48; col. 4, line 58-col. 5, line 10; col. 5, line 20-col. 6, line 13; col. 6, line 57-col. 9, line 47; col. 10, line 21-col. 12, line 12; FIG. 1; FIG. 3; FIG. 4; FIG. 5; FIG. 6; FIG. 7; FIG. 8; FIG. 9; FIG. 10; FIG. 14; FIG. 15; FIG. 16; FIG. 17.</p> <p>IPR2020-1350, Paper 1, Petition for Inter Partes Review at 3, 4, 5, 7, 24-36, 40, 44, 45, 46, 49-58.</p> <p>IPR2020-1350, Paper 9, Patent Owner’s Preliminary Response 15, 16.</p> <p>IPR2020-1350, Paper 20, Decision Denying Institution of Inter Partes Review at 3, 4, 9.</p>	<p>“a passageway within a single magnetic core, rather than two magnetic core elements separated by a gap”</p> <p>’955 Patent at 4:15–54, 4:65–67, 6:20–7:3, 9:48–10:50, Fig. 2, Fig. 5, Figs. 11–14.</p> <p>7,352,269 Patent Prosecution History, Response to Office Action (September 14, 2005) at 21–22.</p> <p>7,772,955 Patent Prosecution History, Response to Restriction Requirement (June 30, 2009) at 6.</p> <p>7,772,955 Patent Prosecution History, Response to Office Action (January 28, 2010) at 9-10.</p> <p>IPR2020-1350, Paper 9, Patent Owner’s Preliminary Response at 15, 18.</p>

Claim Term	Claim(s)	Plaintiffs' Proposed Construction, Intrinsic Evidence	Defendant's Proposed Construction, Intrinsic Evidence
		<p>IPR2020-1350, Paper 1, Petition for Inter Partes Review at 2-4, 17-19, 24, 42, 57, 58, 65, 66.</p> <p>Plaintiff reserves the right to rely on any evidence cited or relied on by Defendant, as well as any evidence cited in the parties' claim construction briefs.</p>	<p>IPR2020-1351, Paper 9, Patent Owner's Preliminary Response at 14, 20, 54-55.</p>
"planar surface"	'955 patent, Claim 23	<p>Plain and ordinary meaning.</p> <p>'955 Patent: col. 2, lines 46-57; col. 4 lines 15-25; col. 5, lines 18-19; col. 5, lines 65-67; col. 6, lines 11-13; col. 6 lines 57-61; col. 7, lines 32-35; col. 7, line 66-col. 8, line 2; col. 8, lines 27-30; col. 8, lines 47-63; col. 9, lines 32-35; col. 10, lines 26-28; col. 11, lines 45-48; FIG. 1; FIG. 2; FIG. 3; FIG. 4; FIG. 5; FIG. 6; FIG. 7; FIG. 8; FIG. 9; FIG. 10; FIG. 14; FIG. 17.</p>	<p>"flat surface"</p> <p>'955 Patent at 4:15–5:17, 6:11-13, Figs. 2, 4.</p> <p>IPR2020-1351, Paper 9, Patent Owner's Preliminary Response at 14, 63-64.</p>

Claim Term	Claim(s)	Plaintiffs' Proposed Construction, Intrinsic Evidence	Defendant's Proposed Construction, Intrinsic Evidence
		<p>IPR2020-1350, Paper 1, Petition for Inter Partes Review at 11, 15, 16, 37, 53, 63.</p> <p>IPR2020-1351, Paper 1, Petition for Inter Partes Review at 20, 49-52, 59-67, 105-110.</p> <p>Plaintiff reserves the right to rely on any evidence cited or relied on by Defendant, as well as any evidence cited in the parties' claim construction briefs.</p>	
"contacting"	'955 patent, Claim 23	<p>Plain and ordinary meaning.</p> <p>'955 Patent: col. 2, lines 46-57; col. 4, lines 15-25; col. 5, lines 18-19; col. 6, lines 11-13; col. 6 lines 57-61; col. 7, lines 32-35; col. 7, line 66-col. 8, line 2; col. 8, lines 27-30; col. 8, lines 47-63; col. 9, lines 32-35; col. 10, lines 26-28; col. 11, lines 45-48; FIG. 1; FIG. 3; FIG. 4; FIG. 6; FIG. 7; FIG. 8; FIG. 9; FIG. 10; FIG. 14; FIG. 17.</p>	<p>"physically joining"</p> <p>'955 Patent at 4:58-5:10, Fig. 2.</p> <p>7,772,955 Patent Prosecution History, Response to Office Action (January 28, 2010) at 4, 9.</p> <p>IPR2020-1351, Paper 9, Patent Owner's Preliminary Response at 62-63.</p>

Claim Term	Claim(s)	Plaintiffs' Proposed Construction, Intrinsic Evidence	Defendant's Proposed Construction, Intrinsic Evidence
		<p>IPR2020-1350, Paper 1, Petition for Inter Partes Review at 11.</p> <p>IPR2020-1351, Paper 1, Petition for Inter Partes Review at 63-64.</p> <p>Plaintiff reserves the right to rely on any evidence cited or relied on by Defendant, as well as any evidence cited in the parties' claim construction briefs.</p>	
"extending to the bottom side of the magnetic core"	'955 patent, Claim 12	<p>Plain and ordinary meaning.</p> <p>'955 Patent: Claim 2; Claim 3; Claim 4; Claim 12; col. 2, lines 46-57; col. 4, lines 15-16; col. 5, lines 10-17; col. 5, line 52--col. 10, line 20; FIG. 2; FIG. 3; FIG. 4; FIG 5; FIG. 6; FIG. 7; FIG. 8; FIG. 9; FIG. 10; FIG. 11; FIG. 12; FIG. 13.</p> <p>IPR2020-1350, Paper 1, Petition for Inter Partes Review at 11, 62, 63, 66.</p>	<p>"folded underneath the magnetic core"</p> <p>'955 Patent at 5:11-17, 5:65-6:1, 6:57-59, 13:22-29, Fig. 2, Fig 4, Fig. 5.</p> <p>7,772,955 Patent Prosecution History, Response to Office Action (January 28, 2010) at 6, 9.</p>

Claim Term	Claim(s)	Plaintiffs' Proposed Construction, Intrinsic Evidence	Defendant's Proposed Construction, Intrinsic Evidence
		Plaintiff reserves the right to rely on any evidence cited or relied on by Defendant, as well as any evidence cited in the parties' claim construction briefs.	IPR2020-1350, Paper 9, Patent Owner's Preliminary Response at 48-49.